1-1-2015

Northern Research Farm Summary

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Abstract
Contains the Farm and Weather Summary of the Northern Research and Demonstration Farm.

Keywords
Agronomy

Disciplines
Agricultural Science | Agriculture | Agronomy and Crop Sciences | Meteorology | Natural Resources and Conservation

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RFR-A1460

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Ag Specialist ..... Matt Schnabel

Research and Demonstration Farms Coordinator ..... Mark Honeyman
103 Curtiss Hall

Research and Demonstration Farms Manager ..... Tim Goode
103Curtiss Hall

Farm and Weather Summary

Micah Smidt, farm superintendent

Farm Comments

Field Days and Tours. Five field day events were held. A total of 420 people visited the farm in 2014. On February 17, Matt Schnabel was hired as an ag specialist and is responsible for the research trials on the farm as well as on-farm cooperator trials around north central Iowa. Matt has been vital to the continued success at the Northern Research Farm.

New Projects. Cover crop methods of seeding, S. Gailans; Cover crop mixes on corn and soybeans, E. Juchems; Fuel usage for different tillage practices, M. Hanna; Hail by fungicide on corn and soybeans, D. Mueller

Crop Season Comments

The first corn was planted May 6 and planting was completed July 9. Harvest began October 16 and finished on October 28 with average yields of 150–180 bushels/acre. Grain moistures were higher than average from the past three years. Grain test weight was lower than in previous years.

Soybean planting started May 7 and was completed July 9. Harvest ran from October 6 through October 15 with average yields of 40–60 bushels/acre.

Yields varied greatly depending on soil water supply. There were multiple drowned-out areas that needed to be replanted because of the wet spring.

Weather Comments

Winter. At the start of 2014, the groundwater level was 9 ft below the soil surface due to the dry 2013 fall. Below average temperatures throughout the year delayed crop development. The coldest February in the 59-year weather history at the farm occurred with an average temperature of 9.1^{o}F. Frost penetrated to 24 in. below the soil surface. The frost line did not thaw until early April.

Spring. The average temperature from March to May was cooler than average. The last hard spring frost came on April 18 when the temperature fell to 26^{o}F. Above average precipitation in April and May delayed planting.

Summer. The cooler-than-average temperatures in May, June, and July slowed the late-planted crop. It was the fifth wettest June in the 65-year precipitation history at the farm (Table 1). There was only one day the temperature reached 90^{o}F and that was on May 30. Most of the rain fell in the second half of June, which made post-applied herbicides difficult to apply. In June, 14 of the 30 days received rain. The largest rain event in June was 3.12 in. on June 17.

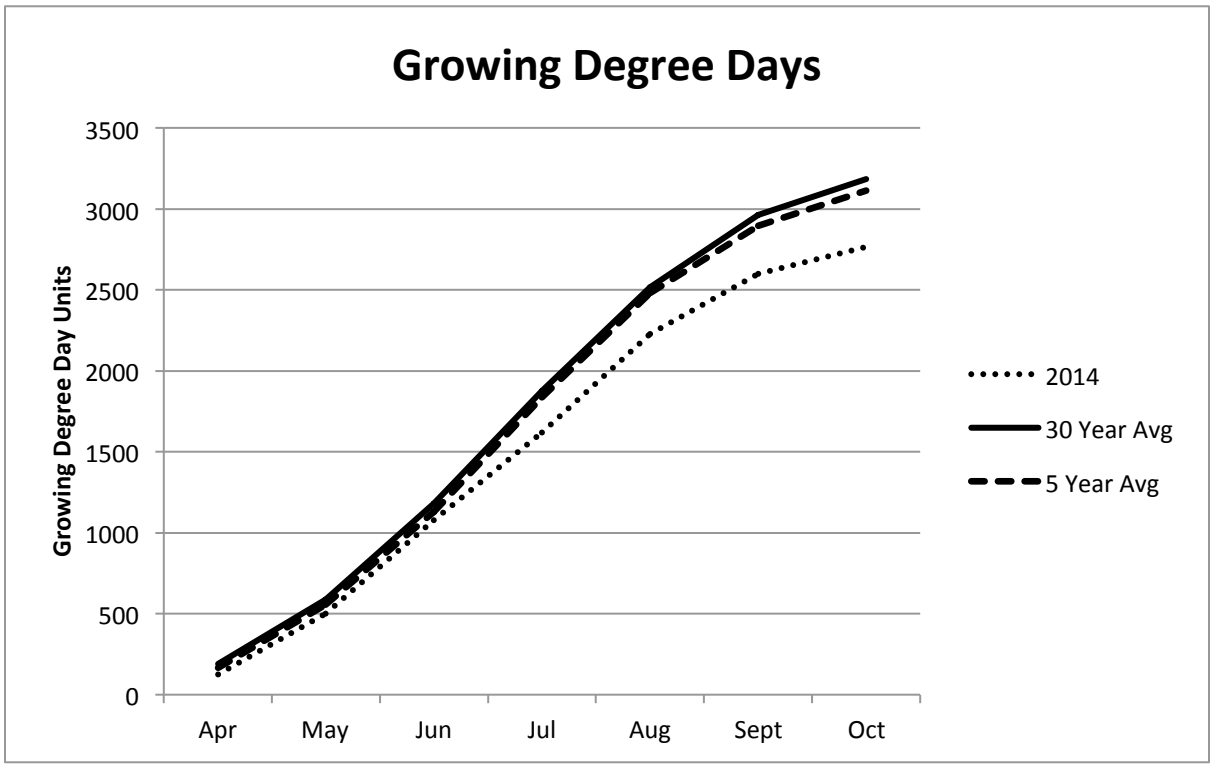
Fall. The first killing frost was October 11 when the temperature dropped to 27^{o}F. By then most of the soybeans were mature and ready to harvest. A majority of the corn had black layered. Field work was completed by November 11. The frost layer was 2 in. below the soil surface on November 15. On November 25 the groundwater table was 4 ft, 2 in. below the soil surface.

Acknowledgements

Thanks to Calcium Products, Inc.; Gold-Eagle Cooperative; DuPont Pioneer; MaxYield Cooperative; North Central Cooperative; Mosaic Company; First Citizens National Bank; Wako, Inc.; Kanawha Equipment, and Bruce Smidt and Lester Schnabel for support.

Table 1. Northern Research and Demonstration Farm, Kanawha, Iowa, monthly rainfall and average temperatures for 2014.

	Rainfall (in.)		Temperature (°F)		Days
Month	2014	Deviation from normal	2014	Deviation from normal	90° or above
March	0.74	-1.12	27.5	-7.0	0
April	5.28	2.01	44.8	-3.2	0
May	4.16	0.22	59.1	-1.0	1
June	9.79	4.81	69.2	-0.2	0
July	5.16	1.15	67.4	-5.5	0
August	5.14	1.42	69.7	-0.8	0
September	4.02	0.96	60.4	-2.0	0
October	2.45	0.35	48.5	-1.9	0
Totals	36.74	9.80			1



Information on Experiments in Previous Annual Progress Reports

Research Farm Projects

Research Projects	Project Leader
Automated weather station	E. Taylor
Cover crop mixes on corn and soybean	E. Juchems
Crop residue and K release	A. Mallarino
Crop rotation and N rates	A. Mallarino
Demonstration shrub row	C. Haynes
Early and late application of fungicide on corn	A. Robertson
Fungicide and insecticide applications on soybean	D. Mueller
Hail by fungicide on corn and soybean	D. Mueller
Home demonstration garden	C. Haynes
Long-term K fertilizer for corn and soybean	A. Mallarino
Long-term tillage and crop rotation	M. Al-Kaisi
Methods of seeding cover crops	S. Gailans
Placement methods for K for corn and soybean	A. Mallarino
Placement methods for P for corn and soybean	A. Mallarino
Planting date for corn and soybean	M. Licht
Post applied urea	J. Sawyer
Seasonal and rotational influence on corn N requirements	J. Sawyer
Soybean disease resistance breeding	S. Cianzio
Soybean SDS breeding	S. Cianzio
Tractor fuel usage	M. Hanna
USA national phenology network	M. Schwartz
Weed identification garden	NRF*

*Northern Research Farm